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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,451	07/18/2003	Yoshiyuki Tanaka	240486US2S	1016
22850	7590	03/04/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			NGUYEN, HIEN N	
			ART UNIT	PAPER NUMBER
			2824	

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/621,451

Applicant(s)

TANAKA, YOSHIYUKI

Examiner

Hien N. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the Election Response filed on 11/05/04.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 21-43, 45-47 and 49-53 is/are rejected.
- 7) ☒ Claim(s) 8-20, 44 and 48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/18/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/17/04, 3/1/04, 2/17/04 & 7/18/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Search Report.

DETAILED ACTION

1. Applicant's election with traverse of Group II in the reply filed on 11/05/04 is acknowledged. The traversal is on the ground(s) that the requirement to elect a single group be withdrawn because of same invention is moot. Therefore, the Restriction requirement of the Office Action dated 10/05/04 is now withdrawn.
2. Claims 1-53 (Group I and Group II) are presented for examining.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Suggested to have a new title which will include the subject of "controlling a number of data write/erase times" in a nonvolatile semiconductor memory.

Claim Rejections - 35 USC § 112

Regarding claim 3, the phrase "**in a mixed manner**" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "in a mixed manner"), thereby rendering the scope of the claim(s) unascertainable. Hence claim 3 will not be treated with respect to prior art at this time.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-7, 21-43, 45-47 and 49-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al.(6,831,865) in view of Kawakami (6,091,643).

Figure 1A and 1 B of Chang et al. disclose a nonvolatile semiconductor memory (124) comprising a memory cell array (11) in which one block (Block 1) for writing/erasing a page unit comprises pages (applied for claims 5-7).

What lacks in Chang reference is a control circuit for managing, for each page, information associated with the number of data write/erase times with respect to each of the pages.

Kawakami figures 4 and 5 disclose a control circuit (11) for detecting a number of data erasing operations (erase numbers) conducted in a memory array. Therefore , it would have been obvious for one of ordinary skill in in the art at the time of the invention was made to have a controlling circuit for detecting a number of data erasing operations of Kawakami to the nonvolatile semiconductor memory of Chang et al in order to provide a state of a memory such as deterioration due to erasing by managing the number of data erases and storing the number of data erases in a different locations (buffer 7, as applied for claims 25, 27, 31-41, 46 and 50).

Regarding claims 2, 26, 28, 42, 47 and 51 the page erase function for each block is disclosed in column 8, lines 25-29.

Regarding claim 4, the redundant area is 206, column 9, lines 48-55.

Regarding claims 23-24 and 29-30 the limitations for using in memory card and controller constituted a system are disclosed in column 6, lines 20-30.

Allowable Subject Matter

Claims 8-20, 44 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

The primary reason for allowance is the inclusion of the function of renewing and erasing with respect to each page after everytime a data is written./erased as well as initiating a new state is not found in the art of references. Claims 44 and 48 further expand a limitation of subtracting a minimum value from a maximum value allowed in erasing in the information for each page..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iwamoto et al(JP 408124393), Kikuchi (6,058,047), Fukumoto

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(6,240,032) and Kawakami (6,654,286) are cited as of interest of similar method of erasing and controlling a number of erase in a non-volatile memory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien N. Nguyen whose telephone number is (571) 272-1879. The examiner can normally be reached on Monday through Thursday 9:30 AM to 7:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. Nguyen

A handwritten signature in black ink, appearing to read 'R. Elms' with a date '2/10/05' written next to it.

RICHARD ELMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800